

Appl. No. 09/781,786
Amdt. dated March 2, 2004
Reply to Office action of January 2, 2004

REMARKS/ARGUMENTS

Claims 1-27 and 29-45 as amended through Amendment E filed October 14, 2003 are presently pending in the application. Of these, Claims 19-27 and 29-45 have been withdrawn from consideration as being directed to a non-elected invention. In this amendment, Claim 1 has been amended. As set forth below, the amendments to the Claims are believed to place the Claims in condition for allowance. The amendments set forth herein are made to comply with the Examiner's requirements and to place the application in condition for allowance or for better form for consideration on appeal. Further, any amendments made to the merit of the application have been made in response to a newly cited reference, which could not have been previously considered. This amendment is believed to comply with the requirements of 37 C.F.R. 1.116. Entry of the amendment, reconsideration of the application, and issuance of a notice of allowance are respectfully requested.

In this Final Office Action, the Examiner is applying a reference (Ichihara et al., Pat. No. 4,093,437) that has not previously of record in this application. In view of the fact that the Examiner is applying a reference that was not previously of record, Applicant respectfully requests that the indication of finality be withdrawn. Withdrawal of the Finality of this Office Action, entry of this amendment, and issuance of a Notice of Allowability are respectfully requested.

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A final office action may be entered on a second office action. 37 C.F.R. §1.113.

However, as stated in the MPEP at §706.07

"While the rules no longer give to an applicant the right to amend as often as the examiner presents new references or reasons for rejection," present practice does not sanction hasty and ill-considered final rejections. The applicant who is seeking to define his or her invention in claims that will give him or her the patent protection to which he or she is justly entitled should receive the cooperation of the examiner to that end, and not be prematurely cut off in the prosecution of his or her application. But the applicant who dallies in the prosecution of his or her application, resorting to technical or other obvious subterfuges in order to keep the application pending before the primary examiner, can no longer find a refuge in the rules to ward off a final rejection.

The examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal. However, it is to the interest of the applicants as a class as well as to that of the public that prosecution of an application be confined to as few actions as is consistent with a thorough consideration of its merits." (Emphasis added)

As noted above, in this final Office Action, the Examiner based the rejection of Claims 1, 3, and 5-13 on a patent that was not previously of record in the application, and which was not previously been considered by the Examiner in any of the prior office actions¹. Hence, the Examiner, by making this Office Action final has not been permitted "a clear issue between applicant and examiner [to develop] ... before appeal" as set forth in MPEP §706.07.

With respect to the rejection of Claim 18, Applicant notes that the Examiner, in addition to the newly cited Ichihara patent, is applying three references that were

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previously of record in the application, two of which (Cusick and De Villiers) were applied by the Examiner against other claims, but were not cited by the Examiner against Claim 18. The Examiner could have asserted these references earlier, but chose not to. The Examiner indicated that this Final Action was necessitated by Applicant's amendment. However, in view of the fact that the Examiner is only now applying references which were previously applied against other claims, but not Claim 18, Applicant respectfully asserts that the Amendment E filed July 9, 2003 did not necessitate the new grounds for rejection.

In view of the fact that issuance of a final office action in light of newly cited patent appears to be contrary to the purposes set forth in the MPEP, and in view of the fact that the Examiner is only now applying references against Claim 18 which could have been previously applied, Applicant respectfully requests that the finality of the office action be withdrawn to give Applicant and the Examiner the opportunity to develop a clear issue with respect to the newly cited patent, and that the Examiner enter this Amendment.

The Examiner rejected Claims 12 and 13 asserting that they fail to further limit the subject matter of Claim 1 from which they directly depend. Claim 1 provides that:

"the calculated overall average pore size of the combined successive thicknesses is smaller than that of the average overall pore size of that of the finest fiber thickness, so as to optimize filtration performance efficiency; the calculated average pore size of the combined successive thicknesses being calculated including factors of porosity of the individual thicknesses and the average pore size of the individual thicknesses."

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In view of the fact that the Claim 1 provides for a "calculated pore size" which is based upon factors of porosity and pore size of the individual layers, the manner in which the average pore size is determined is important in determining whether the filter meets this last noted requirement. Hence, contrary to the Examiner's assertions regarding the subject matter of Claim 12, Applicant respectfully asserts that the equation of Claim 12, which is now included in Claim 1, does modify the Claim. As is known, permeability is directly related to porosity. Hence, Claim 13 which defines the permeability of the multi-layered filter media, as being based upon porosity and fluid flow rate through the individual layers of the multi-layered filter media, is respectfully asserted to further define the subject matter of Claim 1. Withdrawal of this objection against Claims 12 and 13 is respectfully requested.

The Examiner rejected Claims 1, 3, and 5-13 under 35 U.S.C. §103 as being unpatentable over the "A-P" reference in view of newly cited Ichihara et al. Dependant Claim 2 was rejected over the "A-P" reference in view of newly cited Ichihara et al. and further in view of Cusick et al. (U.S. Pat. No. 5800586). Dependant Claims 4 and 14-17 were rejected over the "A-P" reference in view of newly cited Ichihara et al. and further in view of De Villiers. Lastly, independent Claim 18 was rejected over the "A-P" reference in view of newly cited Ichihara et al, Cusick and DeVilliers.

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Claim 1 has been amended to more clearly provide that in the multi-layer filter media, "the average pore size of the upstream thickness is smaller than the average pore size of the downstream thickness" and that

"the calculated overall average pore size of the combined successive thicknesses is smaller the average overall pore size of that of the finest fiber thickness, so as to optimize filtration performance efficiency; the calculated average pore size of the combined successive thicknesses being calculated including factors of porosity of the individual thicknesses and the average pore size of the individual thicknesses."

As noted in the prior amendment, the A-P reference does not teach or suggest the use of filter thicknesses comprised of "multiple selected fiber sizes" as is currently set forth in Claim 1. Further, the A-P reference does not teach or suggest that a multi-layered filter media have a "calculated overall average pore size" which, based on the "factors of porosity of the individual layers and the average pore size of the individual layers" is "smaller than the average overall pore size of that of the finest fiber thickness."

Additionally, Ichihara (US Pat. No. 4093437) does not teach that the "calculated overall average pore size" of the multi-layer filter is "smaller than the average overall pore size of that of the finest fiber thickness", or that the "calculated overall average pore size" of the multi-layer filter media is based on the "factors of porosity of the individual layers and the average pore size of the individual layers."

Claims 4 and 14-17 are directed to the length and denier size of the fibers used for the individual thicknesses or layers of the multi-layer filter media. Claims 4 and 14-17 all

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depend directly from Claim 1, and thus include the elements set forth in Claim 1. While DeVilliers et al. discloses a dual layer filter, DeVilliers et al. do not disclose the denier sizes set forth in Claims 4 or 14-17.

Claim 18 has been amended to be placed in paragraph format to make the claim easier to read. Claim 18, as amended, provides that the individual thicknesses have "calculated average pore sizes" determined by the factors of "thicknesses, pore and fiber sizes of each layer" and that "the calculated overall average pore size of the adjacent successive thicknesses being smaller than the calculated average overall pore size of said independent finest fiber thickness". Claim 18 further provides for the denier size of the various fibers which make up the different thicknesses or layers of the filter. Lastly, Claim 18 sets forth the formulas used to calculate the average pore sizes for the individual layers and for the overall multi-layer filter media. As discussed above, neither the A-P reference, Ichihara, or Cusick teach or suggest all these elements.

As noted in Amendment E filed July 9, 2003, and as noted above, the A-P reference does not teach or suggest that the filter thicknesses each be comprised of "multiple selected filter fiber sizes" or that the average pore size of the multi-layer filter media be determined based on the porosity of the individual layers of the filter media.

Newly cited Ichihara et al. discloses a multi-layer air filter having a density gradient between the upstream and down stream sides of the filter. However, Ichihara does not teach or suggest a "calculated overall average pore size of the combined successive

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thicknesses" that "is smaller than the average overall pore size of that of the finest fiber thickness". Nor does Ichihara teach or suggest how the average pore size is to be determined as set forth in Claims 12, 13 or 18.

Cusick et al. and DeVilliers et al. which are newly cited against claim 18 also fail to teach or suggest at least these noted elements of Claim 18. In particular, DeVilliers et al. do not teach or suggest the denier size of the fibers as set forth in the instant claims. DeVilliers et al. provide that their filter includes fibers of 1.5, 3 and 4 deniers. Applicant, however, has fibers of 6 and 20 denier as set forth in the claims.

In view of this differences between Applicant's claimed invention, and the disclosure set forth in the noted references, Applicant respectfully traverses the Examiner's rejection of those Claims under 35 U.S.C. § 103. Specifically, Applicant believes the Examiner has not established a *prima facie* case of obviousness as required under patent law and in accordance with the Manual of Patent Examining Procedure ("MPEP"). The MPEP states,

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed., Cir 1991) See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

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MPEP § 706.02(j). The MPEP also states,

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q.2d 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

MPEP § 2143.03.

In reviewing the Examiner's 35 U.S.C. § 103 analysis of Claims a and 18, it appears the Examiner has made general statements regarding duplication of components disclosed in the cited references. However, as set forth above, the references do not definitively show that all elements of the Claims. In fact, as noted above, there are elements specified in independent Claims 1 and 18 that are not suggested or disclosed at all in A-P reference or the Ichihara patent.

As indicated by the excerpts from the MPEP cited above, establishing a *prima facie* case of obviousness requires that "the prior art reference (or references when combined) must teach or suggest all of the claim limitations." (Emphasis added.) Because none of the references teach or suggest a multi-layer filter media in which the pore sizes of the various thicknesses become smaller from the downstream side to the upstream side, and wherein the calculated overall average pore size of the filter media is smaller than the smallest pores of the individual layers, it is respectfully contended

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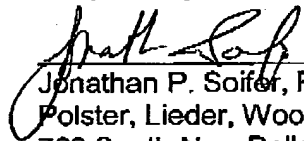
that the references, whether considered individually or in combination, do not suggest or disclose at least one element specifically required by Claims. Hence, the Examiner the cited references do not establish a *prima facie* case of obviousness against Claims 1 and 18. Claims 1 and 18 are therefore believed to be in condition for allowance.

It is noted that independent Claim 1 forms the basis for all dependent Claims 2-11 and 13-17. Hence these claims are also believed to be allowable.

In view of the foregoing, Claims 1-11 and 14-18 are believed to be in condition for allowance. A Notice of Allowability with respect to these claims is thus respectfully requested.

Respectfully Submitted,

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